

ABSTRACT:Digital Signal Processing Methods and Apparatus

This invention generally relates to methods, apparatus and computer program code processing digital data using non-negative matrix factorisation.

A method of digitally processing data in a data array defining a target matrix (X) using non-negative matrix factorisation to determine a pair of matrices (F, G), a first matrix of said pair determining a set of features for representing said data, a second matrix of said pair determining weights of said features, such that a product of said first and second matrices approximates said target matrix, the method comprising: inputting said target matrix data (X); selecting a row of said one of said first and second matrices and a column of the other of said first and second matrices; determining a target contribution (R) of said selected row and column to said target matrix; determining, subject to a non-negativity constraint, updated values for said selected row and column from said target contribution; and repeating said selecting and determining for the other rows and columns of said first and second matrices until all said rows and columns have been updated.

Figure 5a